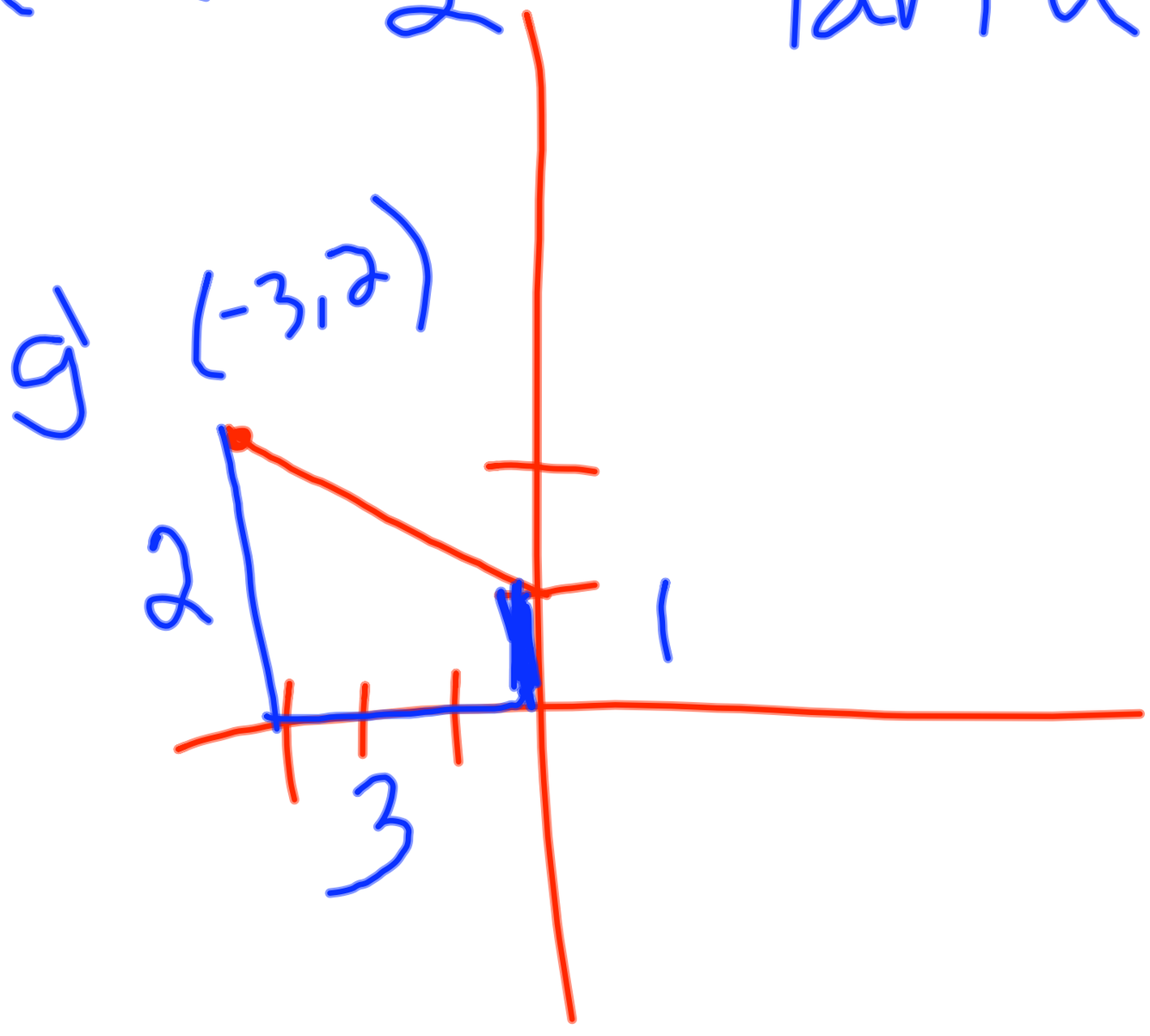
$$g(0) = \frac{1}{2}(3)(3) = \frac{9}{2}$$

Par+a



$$g'(0) = 1$$

Part b

at $x = 3$

Absolute Min.

$[-5, 4]$ closed intervals

$x = -5$

check endpoints

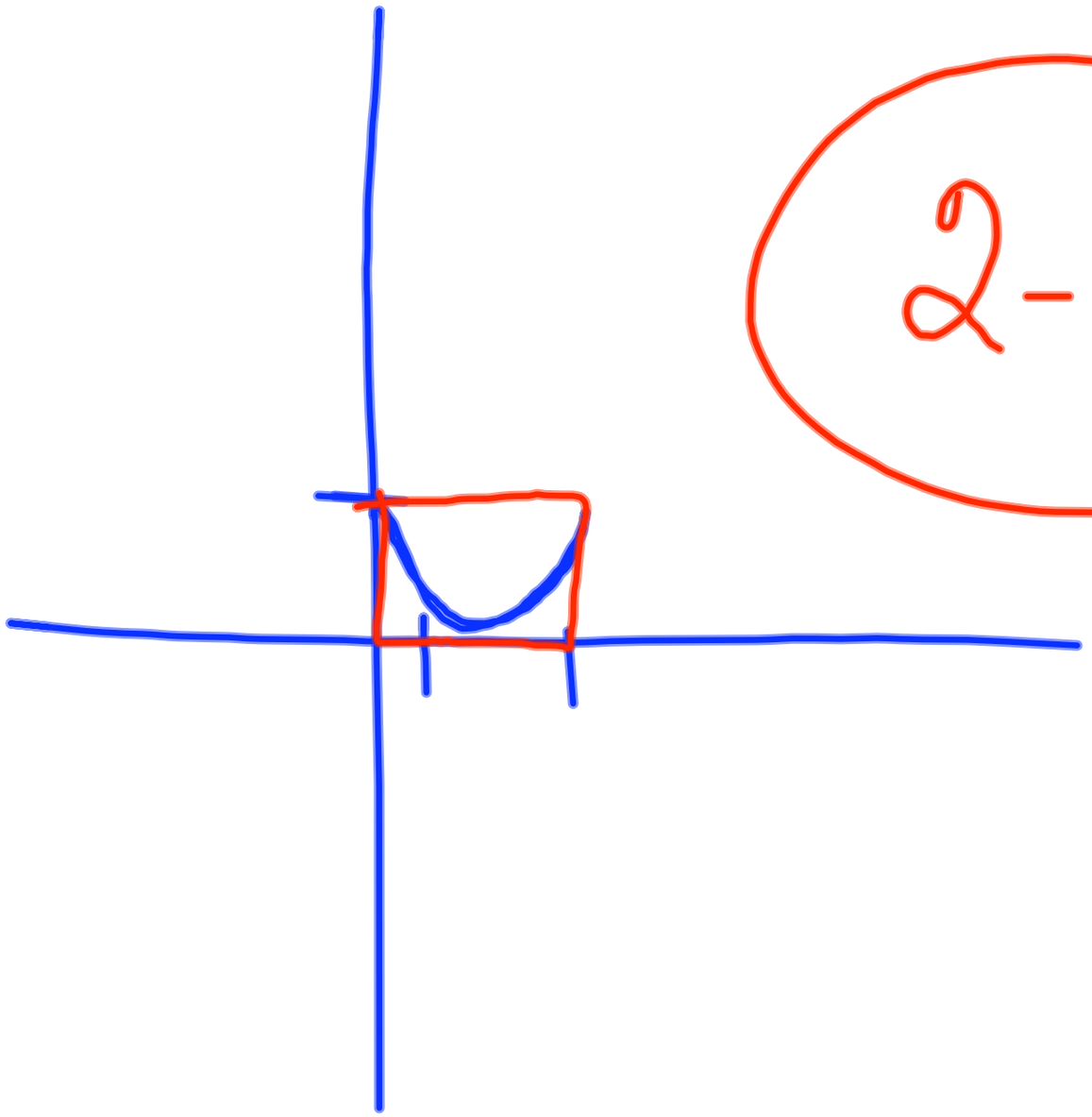
$x = -4$

$x = 4$

$$g(-5) = \int_{-3}^{-5} f(t)\,dt = 0$$

$$g(-4) = \int_{-3}^{-4} f(t)\,dt = -\frac{1}{2}\cdot 1\cdot 2 = -1$$

$$g(4) = \int_{3}^{4} f(t)\,dt = \frac{9}{2} + \left(\frac{4-\pi}{2}\right) = \frac{13-\pi}{2}$$



$2 - \frac{1}{2}\pi \cdot 1$

$\frac{4-\pi}{2}$

Point of Infl.

at

$x=-3$ because f' is increasing and then dec.

$x=1$ dec. then inc.

$x=2$ inc. then dec.